

(FILE 'HOME' ENTERED AT 09:58:30 ON 19 APR 2006)

FILE 'CAPLUS, MEDLINE' ENTERED AT 09:58:37 ON 19 APR 2006

|    |  |
|----|--|
| L1 | 71 S (AEROSOL OR CONDENSAT? OR (VAPOR? OR VAPOUR?)) (5A) (CANNABIS |
| L2 | 0 S L1 AND (CARRIER (5A) GAS)                                      |
| L3 | 20 S L1 AND GAS?   |
| L4 | 14 DUPLICATE REMOVE L3 (6 DUPLICATES REMOVED)                      |
| L5 | 14 FOCUS L4 1-   |

L5 ANSWER 1 OF 14 CAPLUS COPYRIGHT 2006 ACS on STN

TI **Cannabis vaporizer** combines efficient delivery of  
THC with effective suppression of pyrolytic compounds

AB **Cannabis vaporization** is a technol. designed to  
deliver inhaled cannabinoids while avoiding the respiratory hazards of  
smoking by heating cannabis to a temperature where therapeutically active  
**cannabinoid vapors** are produced, but below the point of  
combustion where noxious pyrolytic byproducts are formed. This study was  
designed to evaluate the efficacy of an herbal vaporizer known as the  
Volcano, produced by Storz & Bickel GmbH&Co. KG, Tuttlingen, Germany  
(<http://www.storz-bickel.com>). Three 200 mg samples of standard NIDA  
**cannabis** were **vaporized** at temps. of  
155°-218°. For comparison, smoke from combusted samples was  
also tested. The study consisted of two phases: (1) a quant. anal. of the  
solid phase of the vapor using HPLC-DAD-MS (High Performance Liquid  
Chromatograph-Diode Array-Mass Spectrometry) to determine the amount of  
cannabinoids delivered; (2) a GC/MS (**Gas** Chromatograph/Mass  
Spectrometer) anal. of the **gas** phase to analyze the vapor for a  
wide range of toxins, focusing on pyrene and other polynuclear aromatic  
hydrocarbons (PAHs). The HPLC anal. of the vapor found that the Volcano  
delivered 36%-61% of the THC in the sample, a delivery efficiency that  
compares favorably to that of marijuana cigarettes. The GC/MS anal.  
showed that the **gas** phase of the **vapor** consisted  
overwhelmingly of **cannabinoids**, with trace amts. of three other  
comps. In contrast, over 111 compds. were identified in the combusted  
smoke, including several known PAHs. The results indicate that  
**vaporization** can deliver therapeutic doses of **cannabinoids**  
with a drastic reduction in pyrolytic smoke compds. Vaporization therefore  
appears to be an attractive alternative to smoked marijuana for future  
medical cannabis studies.

ACCESSION NUMBER: 2004:397958 CAPLUS

DOCUMENT NUMBER: 141:355141

TITLE: **Cannabis vaporizer** combines  
efficient delivery of **THC** with effective  
suppression of pyrolytic compounds

AUTHOR(S): Gieringer, Dale; St. Laurent, Joseph; Goodrich, Scott

CORPORATE SOURCE: California NORML, San Francisco, CA, 94114, USA

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PUBLISHER: Haworth Press

DOCUMENT TYPE: Journal

LANGUAGE: English

REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

## Refine Search

Your wildcard search against 10000 terms has yielded the results below.

***Your result set for the last L# is incomplete.***

The probable cause is use of unlimited truncation. Revise your search strategy to use limited truncation.

### Search Results -

| Terms   | Documents |
|---|-----------|
| ((NaCl or (sodium adj chloride)) near (molten or melt\$)) and aerosol | 11        |

Database:

US Pre-Grant Publication Full-Text Database  
 US Patents Full-Text Database  
 US OCR Full-Text Database  
 EPO Abstracts Database  
 JPO Abstracts Database  
 Derwent World Patents Index  
 IBM Technical Disclosure Bulletins

Search:

L4

Refine Search

Recall Text

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### Search History

DATE: Wednesday, April 19, 2006   [Printable Copy](#)   [Create Case](#)

**Set Name Query**  
 side by side

**Hit Count Set Name**  
 result set

DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=OR

L4    ((NaCl or (sodium adj chloride)) near (molten or melt\$)) and aerosol

11    [L4](#)

L3    ((NaCl or (sodium adj chloride)) near (molten or melted)) and aerosol

5    [L3](#)

DB=USPT; PLUR=YES; OP=OR

L2    4279824.pn.

1    [L2](#)

DB=PGPB; PLUR=YES; OP=OR

L1    20030062042

1    [L1](#)

END OF SEARCH HISTORY

|    | U | 1 | Document ID          | Issue Date | Pages |
|----|---|---|----------------------|------------|-------|
| 1  |   |   | US 20030032638<br>A1 | 20030213   | 11    |
| 2  | X |   | US 20020058009<br>A1 | 20020516   | 46    |
| 3  | X |   | US 6591839 B2        | 20030715   | 5     |
| 4  | X |   | US 6514482 B1        | 20030204   | 23    |
| 5  |   |   | US 6306431 B1        | 20011023   | 35    |
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| 12 | X |   | US 5915378 A | 19990629   | 36    |
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